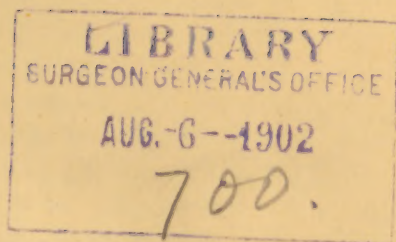


BOVEE (J.W.)

Emmenagogues,
their indications and uses.



EMMENAGOGUES, THEIR INDICATIONS AND USES.

By J. WESLEY BOVEE, M. D., Washington, D. C.

Non-Resident Honorary Fellow Medical Society of Virginia, etc.

The proper employment of a class of remedies known as emmenagogues has become of lessened interest to a large proportion of our profession, and the misuse of them is noticeable to the consultant. It is, therefore, thought a *resume* of the subject at this time would not be valueless.

Emmenagogue, derived from two Greek words, signifies a remedial agent which stimulates or restores the normal menstrual flow when it is irregular or absent.

To properly consider this class of remedies, the pathological condition causing the deviation in the menstrual flow or the anatomical abnormality must be carefully investigated. Were the uterus absent, or some of the other anatomic anomalies present, amenorrhœa would continue indefinitely, in spite of all drugs. Yet one can scarcely doubt that many remedies, alone or assisted, under ordinary conditions, do increase the amount of menstrual flow, or restore it even after long periods of amenorrhœa, or at times when it would not appear at the expected time.

Many authorities, however, declare that true emmenagogues do not exist. By this is meant any agent that will, *per se*, produce or increase the menstrual flow. This declaration is based upon the fact that the uterine mucosa is not one of the excretory structures through which medical agents are expelled from the body. It is very difficult to trace the reasoning in such a statement when we remember most portions of the body yield to stimulants.

The conclusions of Christopher Martin (*Brit. Gyn. Jour.*, Nov., 1893), who has carefully studied the subject of menstruation, are:

LIBRARY
SURGEON GENERAL'S OFFICE

AUG. 6 - 1902

700.

1. Menstruation is a process directly controlled by a special nerve centre.
2. This center is located in the lumbar portion of the spinal cord.
3. The changes in the uterine mucosa during a period are brought about by catabolic nerves and during the interval by anabolic nerves.
4. Menstrual impulses reach the uterus either through the pelvic splanchnics or the ovarian plexus, possibly both.
5. Removal of the uterine appendages arrests menstruation by severing the menstrual nerves.

It is probable the deductions are in the main correct. The sexual sense is located in the cord, and experiments show the same to be the site of the centre of menstruation. But abolishment of menstruation by removal of the uterine appendages is by no means constant. It is well known excessive exercise, emotions, excessive sexual indulgence, or even desire, will continue menstruation long after removal of the appendages. The gynecological surgeon sees many patients who menstruate after removal of the uterine appendages. Whether a diseased condition of the uterine mucosa or its muscle is the direct cause cannot now be stated, though no doubt such conditions are the exciting causes in many instances. The development of uterine fibroids after removal of the tubes and ovaries often act in this manner.

CONDITIONS REQUIRING EMMENAGOGUES.

Two distinct varieties of amenorrhœa are met with. One of them, in which the appearance of menstruation is delayed considerably beyond the usual age of puberty, is known as *emansio-mensium*. The other is called *suppressio-mensium*. In the former we have first to consider the age and general condition of the individual. It is only in those in which the patient has reached the age of eighteen years that treatment for *emansio-mensium* should be attempted, unless the general condition of the patient or her environments be bad, when a tonic course of treatment should be instituted. If *molimina* be present, some of the direct emmenagogues may be employed preceding or during the existence of them, and usually with happy results. The physical obstructions to the menstrual flow are considered separately in another place.

Very rarely, indeed, are direct emmenagogues, those acting directly on the uterine mucosa, indicated in the treatment of delayed, absent, or scanty menstruation. Usually some faulty, general condition exists, having the menstrual disorder as one of the many symptoms present. Being one to which much importance is attached by the mind untrained concerning such matters, it assumes the place of first importance and may be the only complaint made by the debilitated, neurotic, or the unfortunate, tuberculous woman. This matter is to some people of such seeming importance that a regular, scant flow of three days or a good amount of flow recurring at slightly greater intervals than four weeks causes them to seek the advice of the physician in attempting to increase the amount in the one case and the frequency in the other. The usual training received by girls during the first five years after puberty is unfavorable to the proper development of their genitalia. It likewise debilitates or prevents their general physical development. The nervous system, however, is usually overtrained, and results in a large proportion of neurotics. As a very marked relation between the nervous and the reproductive systems exist, the neurotic origin of menstrual abnormalities is manifest. Even though they pass successfully through these few years, other difficulties beset them. The indoor life incident to employment as store clerk, typewriter, book-keeper, and many other occupations have a tendency in the same direction. Shock, anger, or sudden news of a depressing character will frequently be the only cause to which long periods of amenorrhoea may be attributed. I have recently had two striking cases of this character. In one, the death of a dear relative caused the menstruation to suddenly stop on the first day in a robust servant girl of twenty years, and at thirty, in spite of much treatment, the flow has never reappeared. In the other, a widow of 32 years was suffering from la grippe and flowing freely. She received a telegram announcing the severe illness of a brother in Illinois. She started at once to go to him, and the flow had stopped before she reached the train. During the eight years since she has not menstruated, though very active treatment has been conducted during most of that time. Both patients are very nervous, and have lost flesh, though continuing their duties. Others of this class of

causes are freight and seasickness. It also includes the infrequent cases of post-marital amenorrhœa. Such a case was reported by Kalbfleisch (*Med. Rec., N. Y.*, 1893, xliii, 217), that of a woman who was always healthy and menstruated regularly previous to marriage at twenty-one years of age. Soon after marriage she became pregnant, and had nine children during the following nineteen years, but never menstruated after the first conception. Other derangements of the nervous system, as chorea, Reynaud's disease, and various neuroses, as spastic paralysis, etc., are common causes of amenorrhœa.

In certain impoverished conditons, as tuberculosis, myxœdema, carcinoma, or syphilis, decreased menstrual flow or entire absence of it is common. In anæmia and obesity, nature seems to divert such blood-loss to the welfare of the general nutrition. Often, however, in plethora the condition of the blood is above normal, and in such cases the lessened menstrual flow is probably due to functional nerve disturbances. Rheumatism and gout play no small part as causative agents. General physical depreciation from drug habits, such as alcoholism, morphomania, or the habitual use of cocaine or absinthe, has a like action. A very common cause of suppression of menstruation is chilling the surface of the body or getting the feet wet during the flow. Cold baths taken during the flow often have a like effect. Then we have to consider the pathological conditions of the pelvic organs in this relation. Chronic ovaritis may continue to such extent as to cause the parenchymatous portion of the organs to be completely displaced by connective tissue. The sclero-cystic ovary may by a slower process attain the same result. In such conditions the menstrual flow may be increased at first, but sooner or later it begins to lessen in amount and finally disappears. New growths in the ovary may have similar effect. Jolland (*Lancet*, London, July 2, 1898) mentions a case of this kind which lasted two years. Removal of the solid ovarian tumor was followed by regular menstruation and pregnancy.

Atrophic endometritis is considered a cause of absent menstruation, though I have seen but one such case. Whether the involvement of the ovarian plexus from inflammatory or suppurative pro-

cesses in the tube or ovary may produce absence of the flow, is an interesting point, about which no conclusions can now be reached. Feinberg (*Centralbl. f. gyn.*, December 2, 1899) mentions a case of amenorrhœa from six to twenty-four months after delivery in a non-nursing woman. In delayed menstruation, mal-development of the female genitalia will occasionally be encountered. Absence of the uterus and often of the appendages is noted. An infantile uterus often has some menstrual irregularity, varying from amenorrhœa to menorrhagia. Superinvolution is productive of absence of the flow. Acquired or congenital atresia of the vagina or cervix is occasionally present, as well as imperforate hymen, to prevent escape of the menstrual discharges. The last mentioned condition is not found in suppressed menstruation. But atresia may occur at any time, either before or after puberty. After all the causes mentioned, cases of delay for years of menstruation without assignable cause will be met. Such an one was reported by Wolfe, in the *London Lancet*, August 6, 1898. The woman had never menstruated until she reached the age of forty-four years, at which time she was seriously frightened, and menstruation began the same day. The flow reappeared a few times at irregular intervals until pregnancy occurred at forty-five (twelve years after marriage), with normal labor.

THE USE OF EMMENAGOGUES.

From the difference in their mode of action, emmenagogues are divided into two classes—viz., *direct and indirect*. The first comprises such remedies as act directly upon the centre of menstruation, the uterine mucosa, or in some other manner without regard to the general condition. The other class comprises such remedies as by changing the general condition of the patient increase or produce the menstrual flow. This class is the most important, and includes such remedies as tonics—iron, arsenic, copper, manganese, gold, digitalis, barium chloride, strychnia and quinia, salicylic acid and its salts, coccus indicans, lappa officinalis, general galvanization, the application of the spinal ice-bag, and various forms of baths.

The principal direct emmenagogues are ergot, oxalic acid, apiolin, binoxide of manganese, permanganate of potash, santolin, eumenol,

indigo, aloes, *menyanthes trifoliata*, turpentine, cantharides, myrrh, rue, savin, tansy, pennyroyal, guaiac, American mistletoe, *senecio Jacoboea*, *cimicifuga*, saffron, cotton root, quinine, *pulsatilla*, water pepper, *serpentaria*, aconite, sage, chamomile, blue cohosh, leeches to the cervix, warm vaginal douches, sitz baths, and local applications of electricity.

It is evident from the long list of direct emmenagogues that a royal road to success in the treatment of amenorrhœa has been sought, in spite of the well-known fact that it is usually due to some vicious general condition. By such treatment it may be possible to occasionally succeed, but the exception must be the rule. It is only by treating the underlying condition, except in special cases, that success is to be expected.

In such general conditions as tuberculosis, carcinoma, and syphilis the amenorrhœa is probably a conservative feature, and should receive no treatment. Anæmia is the principal cause of lessened menstrual discharge, and calls for the tonics mentioned.

An elixir of the seeds of the common burdock (*lappa officinalis*) in the dose of a teaspoonful after each meal for a month, has been highly recommended for suppressed menstruation in young girls. It has not been used extensively. Digitalis, by increasing the arterial tension, acts well in many cases. Salicylic acid and the salicylates act best when the uric acid diathesis is a feature of the condition. Guaiac, though generally considered a direct emmenagogue, certainly acts well under the same conditions. Phillips strongly recommends *picrotoxine*, the active principal of *cocculus indicans*, in doses of 1-60 to 1-12 grains, when anæmia is present. The preparations of iron, especially when combined with manganese, are favorite remedies in the same conditions. Stewart's well-known prescription contained arsenite of copper and *nux vomica*. Barium chloride given in doses of 1-4 to 1 grain with iron chloride tincture three times daily has acted nicely in some cases. General galvanization and Faradization are useful as general tonics. The ice-bag applied to the lumbar spine has a stimulating and tonic action on the nervous system, especially the vaso-motor portion. It increases the amount of menstrual flow by engorging the pelvic blood vessels and stimulating the

centre of menstruation. General bathing in cold water with brisk rubbing or the cold plunge, by its tonic action, acts well as an indirect emmenagogue. The usual accompanying constipation is best treated by such emmenagogue cathartics as aloes and myrrh or carbonate of magnesia. Aloes and myrrh act by engorging the pelvic viscera. The magnesium salt is given in delayed menstruation in doses of thirty to ninety grains, the smaller dose being given nightly for a fortnight and the larger dose nightly until the flow appears.

After the continued use of general tonics direct emmenagogues are often indicated. We should ever remember the golden rule: "If we do no good, be sure we do no harm," is particularly necessary in the application of these remedies. We should be sure pregnancy is not present before we resort to the use of powerful emmenagogues. The simplest direct emmenagogues consist of the sitz bath, pediluvia and external friction, to which may be added hot drinks of infusions of cinnamon, chamomile, ginger, tansy, pennyroyal, water pepper, sage, or serpentaria, which act as relaxants or diaphoretics. Some, however, act as stimulants to the pelvic circulation. White (*London Lancet*, 1885) praises wineglassful doses of a decoction of *menyanthes trifoliata*. Ergot acts best with iron, though a pronounced direct emmenagogue. Sir James Sawyer (*Birmingham Med. Rev.*, 1887, xxi, 1) says guaiac is especially valuable when the cause of the amenorrhœa is anæmia or some other obscure condition. It, however, does not act well alone, but may be given in combination for weeks without danger.

A favorite preparation is the emmenagogue mixture of Professor Dewees, which is composed of the following:

Tinct. ferri chlorid.	6 parts.
Tinct. cantharid.	2 parts.
Tinct. aloes	8 parts.
Ammoniated tinct. of guaiac	24 parts.
Simple syrup	58 parts.

The usual dose of this mixture is a tablespoonful three times daily.

The cantharides in this mixture is often objectionable, and frequently the proportion of aloes has to be increased or reduced. Guaiac does occasionally cause abdominal pain and purging, when its employment should be temporarily suspended.

When heavy nerve strain has produced irregular or delayed menstruation, a combination of strychnia, aloin and atropia is of signal benefit. Aloes acts well in obesity by depleting the system and engorging the pelvic circulation. The spinal ice-bag is here useful. In nerve tension, the use of the bromides is generally essential. The compound sumbul pill made from the formula of the late Prof. Wm. Goodell I have found a sheet anchor. The formula of it is: Arsenous acid, one-fortieth of a grain; dried sulphate of iron and sumbul each one grain, and asafœtida two grains. It is especially valuable when nervous manifestations and anæmia accompany amenorrhœa. Physical and mental shock have been known to restore the menses when other remedies had failed. Collins (*Brit. Med. Jour.*, 1889, ii, 921) reports a case of a strong, healthy, single woman of thirty-five years, who, from an unknown cause, had not menstruated in two and a half years, in spite of treatment addressed to the condition. One evening, on returning home from a country walk, she was suddenly alarmed by a tramp by the roadside, and was very much frightened. Her catamenia began that evening and continued regularly. Inglott (p. 717, same volume) mentions the case of a healthy girl of nineteen years, who had passed two periods, and, on falling down a terrace, began menstruating regularly the same day. In absence of the flow from taking cold general treatment in the way of hot baths and cathartics to the extent of restoring the circulatory equilibrium is required. Aconite acts well in such cases, especially when given in hot water.

A few days before the expected flow the employment of any of the direct emmenagogues has a marked tendency to restore the menstrual function. Most of them act by stimulating the centre of menstruation in the spinal cord. *Ergot* acts strongly as a stimulant upon all unstriated muscular fibres. In doses of twenty to thirty drops of the fluid extract three times daily, with iron, it is a powerful, though treacherous emmenagogue. V. Poulet (*Arch. de Toccol.*, Par., 1886, xiii, 539) first called attention to the emmenagogue action of *oxalic acid*. Since then it has been largely employed with gratifying results. A. W. Marsh (*Therap. Gaz.*, Detroit, 1891, vii, 164) was the first to recommend it in this country. Since that time Bloom, Talley,

and Penrose have carefully studied its action and speak very highly of it. Poulet's formula was oxalic acid two parts, cold water two hundred parts, and syrup of bitter orange peel sixty parts. Of this a teaspoonful was given by mouth hourly for a few hours just before the flow should appear. Marsh gives oxalic acid in one-fourth grain doses every four hours, with syrup of orange peel and water. Penrose says one-tenth to one-fourth of a grain given in syrup of lemon for one to four months has proven good. Bloom employed it in more than one hundred cases, and says it is the surest and safest emmenagogue. Talley reports toxic symptoms from three half-grain doses given four hours apart. These were vomiting, pain in the epigastrium, complete prostration, weak and rapid pulse, cold extremities; eruption and itching on the legs, arms and trunk, like urticaria, which lasted about seven days. My experience with it is limited to about thirty cases, in a few of which was noted gastric irritability and exhaustion. I am not prepared to recommend it as a safe remedy, but its efficiency is equal to that of any remedy I have used as a direct emmenagogue.

Apiol is an excellent remedy, especially when administered a few days preceding the flow. *Apiolin*, supposed to be the active principle of *apiol*, is known in this country as *apiol camphor* or *parsley camphor*. It is white in color, and has the characteristic taste, but only a faint odor of parsley. Its action has to be carefully watched, as it is liable to cause intoxication, giddiness, flashes of light and vertigo, with ringing in the ears. Sharp & Dohme color it red that it may not be so readily decomposed by light. It should be given in three to ten-grain doses two to three times daily for a few days preceding the expected flow.

Manganese binoxide and *permanganate of potash*, two kindred remedies, have been highly recommended by eminent gynecologists. They are best given in pill form after meals in doses of one to two grains, and from one day to several weeks. Ringer says in amenorrhœa of young women it will restore the flow after a lapse of two years or longer. It is most excellent in scanty flow. Fordyce Barker found it acted nicely in three classes of cases—1, young girls coming from the country for purposes of education; 2, anæmia from

seasickness, and 3, in women between thirty and forty years of age who have a rapid increase in weight, with decrease in the amount of flow. *Senecio vulgaris* and *S. Jacobæa* (common ragwort) are flow. *Senecio vulgaris* and *S. Jacobæa* (common ragwort) are recommended for amenorrhœa following confinement, or from cold, but is not sufficient in anæmia. It at best requires from ten to fourteen days for its action. The dose is one to two drachms of the tincture or twenty minims of the fluid extract three or four times daily.

Santonin, as an emmenagogue, has been used to a considerable extent, and is said to be particularly valuable in the anæmic variety of amenorrhœa. It appears to act well when the uterus is engorged. The dose of ten grains given at night for two nights preceding the flow seems dangerous. It is a very treacherous drug, and, like oxalic acid, should be used very cautiously. *Electricity* has been employed locally for amenorrhœa with doubtful success. The Faradic or the galvanic current may be employed by passing the current entirely through the pelvis in virgins, or with the negative pole against the cervix in others. The intra-uterine application for such conditions is scarcely advisable. Jones, of Tennessee, has recommended *indigo* as an emmenagogue, it having acted well in fourteen cases he observed. He mixed two ounces of indigo with a half-ounce of subnitrate of bismuth, and gave of the mixture half a teaspoonful in one-third glassful of water three times daily. *Eumenol*, Merck's preparation of the Tang-kui root, has been used by the Chinese for centuries in the treatment of amenorrhœa and dysmenorrhœa. Mueller and Hirth are enthusiastic supporters of it. Mueller says it is non-toxic and non-oxytocic.

Turpentine and cantharides are dangerous as emmenagogues, because of their tendency to irritate the urinary organs. Professor Parvin's favorite remedy was a pill composed of one grain each of aloes, dried sulphate of iron and white turpentine, which was given three times daily. Pennyroyal, rue, savin, and tansy are unreliable, and from their liability to produce gastro-intestinal irritation, are dangerous. The American mistletoe and cotton root are largely employed in the form of infusion in the West and Southwest for menstrual suppression from cold, and undoubtedly have merit. It acts

best in nervous young girls. A tea of them is used freely, especially by negroes. Leeches to the cervix are troublesome and of little value. The bleeding following their removal is often severe.

